

LISTING OF CLAIMS

A detailed listing of all claims that are, or were, in the present application, irrespective of whether the claim(s) remains under examination in the application are presented below. The claims are presented in ascending order and each includes one status identifier. Those claims not cancelled or withdrawn but amended by the current amendment utilize the following notations for amendment: 1. deleted matter is shown by strikethrough for six or more characters and double brackets for five or less characters; and 2. added matter is shown by underlining.

1-22. (Cancelled)

23. (Previously Presented) A metal-ceramic circuit board comprising:

a substantially planar base plate of aluminum or aluminum alloy, the base plate having a proof stress of not higher than 95 MPa and not lower than 40 MPa, and a thickness of not smaller than 1 mm; and

a ceramic substrate board formed of a planar plate,

wherein one surface of the ceramic substrate board is bonded directly to the base plate without any intervening material in such a manner that the aluminum or aluminum alloy is molten, contacted with the ceramic substrate board, and cooled, another surface of the ceramic substrate board has a metal conductive member, said metal conductive member forming part of an electronic circuit member, and an area of the base plate is larger than an area of the ceramic substrate board, said conductive member being made of a material selected from the group consisting of copper, a copper alloy, aluminum, and an aluminum alloy.

24. (Previously Presented) The metal-ceramic circuit board according to claim 23, wherein a plurality of ceramic substrate boards are bonded directly on one surface of the base plate.

25. (Cancelled)

26. (Previously Presented) The metal-ceramic circuit board according to claim 23, wherein said ceramic substrate board is made of a material selected from the group consisting of alumina, aluminum nitride, and silicon nitride.

27. (Previously Presented) The metal ceramic circuit board according to claim 23, wherein said base plate has a heat sink.

28. (Previously Presented) The metal-ceramic circuit board according to claim 23, wherein said metal conductive member is bonded on the other surface of the ceramic substrate board using a brazing material.

29-32. (Cancelled)

33. (Previously Presented) The metal-ceramic circuit board according to claim 23, wherein the circuit board can withstand a thermal cycle test of at least 1000 times.

34. (Previously Presented) The metal-ceramic circuit board according to claim 33, wherein the thermal cycle test comprises at least 3000 times.

35-36. (Cancelled)

37. (Previously Presented) The metal-ceramic circuit board according to claim 23, wherein said base plate has a thickness of 1mm to 30mm.

38. (Previously Presented) A power module comprising:

a substantially planar base plate of aluminum or aluminum alloy, the base plate having a proof stress of not higher than 95 MPa and not lower than 40 MPa, and a thickness of not smaller than 1 mm;

a ceramic substrate board formed of a planar plate; and

a semiconductor tip,

wherein one surface of the ceramic substrate board is bonded directly to the base plate without any intervening material in such a manner that the aluminum or aluminum alloy is molten, contacted with the ceramic substrate board, and cooled, and wherein said semiconductor tip is provided on another surface of said ceramic substrate board.

39. (Previously Presented) A metal-ceramic circuit board comprising:

a substantially planar base plate of aluminum or aluminum alloy, the base plate having a proof stress of not higher than 95 MPa and not lower than 40 MPa, and a thickness of not smaller than 1 mm; and

a ceramic substrate board formed of a planer plate,

wherein one surface of the ceramic substrate board is bonded directly to the base plate without any intervening material in such a manner that the

aluminum or aluminum alloy is molten, contacted with the ceramic substrate board, and cooled, a metal conductive member is bonded by using a brazing material on the other surface of the ceramic substrate board, said metal conductive member forming part of an electronic circuit member, and an area of the base plate is larger than an area of the ceramic substrate board, said conductive member being made of a material selected from the group consisting of copper, a copper alloy, aluminum, and an aluminum alloy.

40. (Previously Presented) The metal-ceramic circuit board according to claim 39, wherein a plurality of ceramic substrate boards is bonded directly on one surface of the base plate.

41. (Previously Presented) The metal-ceramic circuit board according to claim 39, wherein said ceramic substrate board is made of a material selected from the group consisting of alumina, aluminum nitride, and silicon nitride.

42. (Previously Presented) The metal-ceramic circuit board according to claim 39, wherein said base plate has a heat sink.

43. (Previously Presented) The metal-ceramic circuit board according to claim 39, wherein the circuit board can withstand a thermal cycle test of at least 1000 times.

44. (Previously Presented) The metal-ceramic circuit board according to claim 43, wherein the thermal cycle test comprises at least 3000 times.

45. (Previously Presented) The metal-ceramic circuit board according to claim 39, wherein said base plate has a thickness of 1 mm of to 30mm.

46. (Previously Presented) A power module comprising:

a substantially planar base plate of aluminum or aluminum alloy, the base plate having a proof stress of not higher than 95 MPa and not lower than 40 MPa, and a thickness of not smaller than 1 mm;

a ceramic substrate board formed of a planar plate; and

a semiconductor tip,

wherein one surface of the ceramic substrate board is bonded directly to the base plate without any intervening material, in such a manner that the aluminum or aluminum alloy is molten, contacted with the ceramic substrate board, and cooled, and wherein a metal conductive member is bonded by using a brazing material on the other surface of said ceramic substrate board.